

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising:
 - receiving a datagram, the datagram comprising a body substring and a header with an index;
 - determining whether a preceding span exists in a span set;
 - determining whether a succeeding span exists in said span set; and
 - applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether ~~contents of~~ said body substring ~~match~~ matches one of said substrings of interest.
2. (Previously Presented) The method of claim 1, wherein if said preceding span and said succeeding span do not exist, then said body substring is inserted into said span set.
3. (Previously Presented) The method of claim 1, wherein if said succeeding span does exist, then said body substring is joined with said succeeding span to produce a join span.
4. (Original) The method of claim 3, wherein said succeeding span is replaced by said join span.
5. (Previously Presented) The method of claim 1, wherein if said preceding span does exist, then said preceding span is joined with said body substring to produce a join span.

6. (Original) The method of claim 5, wherein said preceding span is replaced by said join span.
7. (Previously Presented) The method of claim 1, wherein if said preceding span and said succeeding span do exist, then said preceding span is joined with said body substring to produce a join span.
8. (Original) The method of claim 7, wherein said join span is joined with said succeeding span to produce a second join span.
9. (Original) The method of claim 8, wherein said preceding span and said succeeding span are replaced by said second join span.
10. (Previously Presented) The method of claim 1, wherein said body substring is forwarded, while parameters of said body substring are stored.
11. (Previously Presented) The method of claim 10, wherein said parameters comprise at least one of: a state of said automaton, said index, a length of the body substring, and a prefix.
12. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a network monitoring function.
13. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as an intrusion detection function.
14. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a firewall function.
15. (Original) The method of claim 1, wherein said method for detecting a

substring of interest is performed as a routing function.

16. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a load balancing function.

17. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as an anti-virus filtering function.

18. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as an anti-spam filtering function.

19. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a document control function.

20. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a web content filtering function.

21. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a virtual private network monitoring function.

22. (Original) The method of claim 1, wherein said method for detecting a substring of interest is performed as a storage area network security function.

23. (Previously Presented) The method of claim 10, further comprising:
determining whether said body substring is subsequently dropped by a target machine.

24. (Previously Presented) The method of claim 23, wherein if said body substring is subsequently dropped, then a connection for passing said body substring is reset.

25. (Original) The method of claim 24, wherein said connection is a TCP connection.

26. (Currently Amended) An apparatus for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising:

means for receiving a datagram, the datagram comprising a body substring and a header with an index;

means for determining whether a preceding span exists in a span set;

means for determining whether a succeeding span exists in said span set;

and

means for applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether ~~contents of~~ said body substring ~~match~~ matches one of said substrings of interest.

27. (Previously Presented) The apparatus of claim 26, wherein if said preceding span and said succeeding span do not exist, then said body substring is inserted into said span set.

28. (Previously Presented) The apparatus of claim 26, wherein if said succeeding span does exist, then said body substring is joined with said succeeding span to produce a join span.

29. (Original) The apparatus of claim 28, wherein said succeeding span is replaced by said join span.

30. (Previously Presented) The apparatus of claim 26, wherein if said preceding span does exist, then said preceding span is joined with said body substring to produce a join span.

31. (Original) The apparatus of claim 30, wherein said preceding span is

replaced by said join span.

32. (Previously Presented) The apparatus of claim 26, wherein if said preceding span and said succeeding span do exist, then said preceding span is joined with said body substring to produce a join span.

33. (Original) The apparatus of claim 32, wherein said join span is joined with said succeeding span to produce a second join span.

34. (Original) The apparatus of claim 33, wherein said preceding span and said succeeding span are replaced by said second join span.

35. (Previously Presented) The apparatus of claim 26, wherein said body substring is forwarded, while parameters of said body substring are stored.

36. (Previously Presented) The apparatus of claim 35, wherein said parameters comprise at least one of: a state of said automaton, said index, a length of the body substring, and a prefix.

37. (Original) The apparatus of claim 26, wherein said apparatus is a network monitor.

38. (Original) The apparatus of claim 26, wherein said apparatus is an intrusion detector.

39. (Original) The apparatus of claim 26, wherein said apparatus is a firewall.

40. (Original) The apparatus of claim 26, wherein said apparatus is a router.

41. (Original) The apparatus of claim 26, wherein said apparatus is a load balancer.

42. (Original) The apparatus of claim 26, wherein said apparatus is an anti-virus filter.

43. (Original) The apparatus of claim 26, wherein said apparatus is an anti-spam filter.

44. (Original) The apparatus of claim 26, wherein said apparatus is a document controller.

45. (Original) The apparatus of claim 26, wherein said apparatus is a web content filter.

46. (Original) The apparatus of claim 26, wherein said apparatus is a virtual private network monitor.

47. (Original) The apparatus of claim 26, wherein said apparatus is a storage area network security device.

48. (Previously Presented) The apparatus of claim 35, further comprising:
means for determining whether said body substring is subsequently dropped by a target machine.

49. (Previously Presented) The apparatus of claim 48, wherein if said body is subsequently dropped, then a connection for passing said body is reset.

50. (Original) The apparatus of claim 49, wherein said connection is a TCP connection.

51. (Currently Amended) A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which,

when executed by a processor, cause the processor to perform the steps of a method for detecting a substring of interest from a plurality of datagrams that arrives out-of-order, comprising of:

receiving a datagram, the datagram comprising a body substring and a header with an index;

determining whether a preceding span exists in a span set;

determining whether a succeeding span exists in said span set; and

applying an automaton having a list of substrings of interest to the body substring of said datagram, wherein the automaton examines one or more words appearing in said body substring to determine whether contents of said body substring ~~match~~ matches one of said substrings of interest.

52. (Previously Presented) The computer-readable medium of claim 51, wherein if said preceding span and said succeeding span do not exist, then said body substring is inserted into said span set.

53. (Previously Presented) The computer-readable medium of claim 51, wherein if said succeeding span does exist, then said body substring is joined with said succeeding span to produce a join span.

54. (Original) The computer-readable medium of claim 53, wherein said succeeding span is replaced by said join span.

55. (Previously Presented) The computer-readable medium of claim 51, wherein if said preceding span does exist, then said preceding span is joined with said body substring to produce a join span.

56. (Original) The computer-readable medium of claim 55, wherein said preceding span is replaced by said join span.

57. (Previously Presented) The computer-readable medium of claim 51,

wherein if said preceding span and said succeeding span do exist, then said preceding span is joined with said body substring to produce a join span.

58. (Original) The computer-readable medium of claim 57, wherein said join span is joined with said succeeding span to produce a second join span.

59. (Original) The computer-readable medium of claim 58, wherein said preceding span and said succeeding span are replaced by said second join span.

60. (Previously Presented) The computer-readable medium of claim 51, wherein said body substring is forwarded, while parameters of said body substring are stored.

61. (Previously Presented) The computer-readable medium of claim 50, wherein said parameters comprise at least one of: a state of said automaton, said index, a length of the body substring, and a prefix.

62. (Previously Presented) The computer-readable medium of claim 50, further comprising:

determining whether said body substring is subsequently dropped by a target machine.

63. (Previously Presented) The computer-readable medium of claim 62, wherein if said body substring is subsequently dropped, then a connection for passing said body substring is reset.

64. (Original) The computer-readable medium of claim 63, wherein said connection is a TCP connection.

65. (New) A method for detecting a substring of interest from a plurality of

datagrams that arrives out-of-order, comprising:

- receiving a datagram, the datagram comprising a body substring and a header with an index;

- determining whether a preceding span exists in a span set;

- determining whether a succeeding span exists in said span set;

- inserting a new span into said span set when neither a preceding span nor a succeeding span exists, the new span corresponding to said datagram;

- replacing said preceding span with the datagram, when a preceding span exists but a succeeding span does not exist;

- replacing said succeeding span with the datagram, when a succeeding span exists but a preceding span does not exist;

- replacing said preceding span and said succeeding span with said datagram, when both a preceding span and a succeeding span exist; and

- applying an automaton having a list of substrings of interest to the body substring of said datagram to determine whether contents of said body substring match one of said substrings of interest.